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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/626,808	07/27/2000	Theodore A. Burnham	T0428/7082 TJ0	5834

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Timothy J Oyer
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Boston, MA 02210

EXAMINER

KUHNS, ALLAN R

ART UNIT PAPER NUMBER

1732

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No. 09/626,808	Applicant(s) BURNHAM ET AL.	
	Examiner Allan Kuhns	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,5,7,8,10 and 13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 37-40 is/are allowed.
- 6) ☒ Claim(s) 2,4,6,9,12,14,16,17,20-36,41 and 43 is/are rejected.
- 7) ☒ Claim(s) 15,18,19 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8/30/02 . 6) ☐ Other:

1.Applicant's election without traverse of Group II in Paper No. 10/27/03 is acknowledged.

2.Claims 1, 3, 5,7-8, 10 and 13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 10/27/03.

3.The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4.Claims 2, 14, 16-17, and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher et al. (3,856,442). Gallagher et al. disclose the basic claimed method including establishing a stream of polymeric material flowing at a rate of at least 5 lbs/hr (column 8, lines 48-49) within a polymer processing space between a rotating screw and an extruder barrel, introducing, into the stream of polymeric material, a blowing agent through a plurality of orifices of the extruder barrel while passing the orifices with a flight of the rotating screw, and admixing the polymeric material and blowing agent to form a solution. Gallagher et al. appear not to explicitly teach that the solution is of a single phase, but such is well known and would have been obvious to one of ordinary skill in the art in order produce a uniformly foamed article.

Gallagher et al. teach a flow rate within the range of claim 28, and metering, as in claim 27, at column 1, line 63. Gallagher et al. illustrate an unbroken screw, as in claim

21, and the periodic blocking of an orifice, as in claim 22, in Fig. 2. Use of a supercritical fluid and forming a microcellular foam, as in claims 16 and 23-24, are well known and would have been obvious to one of ordinary skill in the art in order to meet commercial demand while using an environmentally acceptable blowing agent.

Gallagher et al. teach nucleating, as in claim 25, and it is submitted that the pressure drop rate of claim 14, the pass rate of claim 17 and the increase of claim 26 are inherent in the use of the apparatus of Gallagher et al. Locating orifices around a barrel, as in claim 20, is well known and would have been obvious to one of ordinary skill in the art in order to achieve adequate blowing agent distribution.

6. Claims 4, 6, 9, 12, 29-36, 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suh et al. (6,005,013). Suh et al. disclose or suggest the basic claimed method including providing an extruder having an inlet and outlet end designed to receive a precursor of a foamed material and release foamed material, an enclosed passageway connecting the inlet and outlet and designed to advance a liquid polymeric stream within the passageway in a downstream direction, and a nucleation region at which a single-phase solution of a polymeric material and blowing agent flowing therethrough is nucleated, establishing a stream of fluid polymeric material flowing in the extruder in a downstream direction, and introducing a fluid that is a gas under ambient conditions into the stream at an injection location of the extruder. Suh et al. appear not to explicitly discuss pressure variance, but operating within the variance range of claim 4 would have been obvious to one of ordinary skill in the art practicing

the process of Suh et al. since it is disclosed at column 13, line 34 that pressures as low as 500 psi may be used.

It is submitted that the pressure drop rate in the process of Suh et al. must necessarily increase, as in claim 6, when viewed from a point where pressure drop begins to occur. Suh et al. teach shaping foam around a wire, as in claim 9, at column 24, lines 10-19. It is submitted that forming a foam with an average cross sectional dimension within the range of claim 12 is within the purview of Suh et al., particularly since Suh et al. teach the aspect of making a foam that is transparent at column 3, lines 53-56.

Suh et al. teach or suggest pressures within the range of claim 29 at column 13, line 34. It is submitted that the rates of claims 30, 35 and 41 are inherent in the practice of the process of Suh et al. Suh et al. teach or suggest microcellular material, as in claim 31, supercritical fluids, as in claim 36, nucleating, as in claims 32 and 43, and a continuous decrease in pressure, as in claim 34. It is submitted that the gear pump of Suh et al. results in a decrease in cross-section, as in claim 33.

7. Claims 11 and 37-40 are allowed.

8. Claims 15, 18-19 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Kuhns whose telephone number is (571) 272-

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1202. The examiner can normally be reached on Monday to Thursday from 7:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni, can be reached on (571) 272-1196.

Allan R. Kuhns

ALLAN R. KUHNS
PRIMARY EXAMINER *AV 1732*

1-8-04